

## BOOK REVIEW

**The Common Insects of North America.** Lester A. Swann and Charles S. Papp. 1972. Harper & Row, New York. xiii + 750 pp., 8 color plates, 2,450 drawings. \$15.00

All but four very minor orders and most suborders, superfamilies, and families (275) are covered and characterized in some detail. A total of 1,422 species are illustrated and treated in some detail, and a great many others are mentioned and described briefly. Not only the adults but the early stages (when known) are described and often are figured. The range and chief environment of each species are given, as well as much information about habits, economic importance, foods, and chief natural controlling agents such as predators, parasites, and virus and bacterial diseases. An introductory section covers such important features as the general characteristics of insects, the chief phyla of animals and classes of arthropods, insect development and metamorphosis, predators and parasites, structures and some physiology, insect defense mechanisms (unfortunately, too short) and "the value of insects." There is a very usable pictorial key to the orders and an excellent geologic time chart covering the main groups of plants and animals, as well as the insects. There is also a very good glossary and a bibliography (perhaps too long) that includes many small papers and references in economic entomology. Throughout, the authors have used as simple and nontechnical language as possible. The black and white illustrations are mostly excellent, although some Lepidoptera do not show the patterns very well and there is some distortion of wing shapes. The scales of magnification or reduction are quite erratic. This can be a bit confusing, even though the size measurements are given. In the copy at hand the color reproduction is not very good.

It is always a problem to a reviewer to decide how much he is justified in listing errors, a good many of which are liable to creep into a book of this magnitude. For example, is such notice useful for corrections in subsequent editions? A couple of slips in the Lepidoptera, with which I have some acquaintance, are: the anal prolegs are not lacking in notodontid larvae, although reduced or greatly modified in many; the tympana of "most moths" are not in the mesothorax but in the metathorax (Noctuoidea). No mention is made of the abdominal tympana of the very large superfamily Pyraloidea. The enormous family Noctuidae has been short-changed; more of the abundant and biologically interesting members should have been included. And why was a highly aberrant specimen used to illustrate the American Copper?

A very large proportion of the insects included are of economic importance. It is hard to fault this, especially since such species are often abundant and likely to be noticed. But as a result many more ecologically significant and interesting species have been left out. I feel, too, that much more should have been included about the ecologic status of insects in their communities and their great importance in energy cycles, subjects in which, it is good to note, very large numbers of people are becoming interested. There is much information about the control of many species by natural means but very little about insecticides, on which we are still dependent in a great many cases (many "instant ecologists" would benefit by some hard facts here).

The geographic coverage is extremely good and is a welcome change from books that give undue importance to Eastern species. Canada and the West are justly represented. The classification and nomenclature are up-to-date, although there will always be subjective differences of opinion in these fields. Undoubtedly this book will be valuable to anybody with an interest in natural history and environmental studies as well as to many entomologists, especially students and those engaged in economic work.

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